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EXAMINER

GUGLIOTTA, NICOLE T

ART UNIT	PAPER NUMBER
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1783

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/590,655	Applicant(s) OHTANI ET AL.	
	Examiner NICOLE T. GUGLIOTTA	Art Unit 1783	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 9, 11 - 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 9, 11 - 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/4/2010</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Examiner's Note

The Examiner acknowledges the amendment to claim 1 and the cancellation of claim 10.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1 – 16 & 18 – 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito (JP 2004-026925 A1 machine translation).

Ito discloses a cellulose acylate film (corresponding to Applicant's cellulose acylate film), wherein the film has a retardation R_e of between 0 and 70 nm (corresponding to Applicant's $46 \leq R_e(630) \leq 200$, where claimed ranges overlap or lie inside the ranges disclosed in the prior art, a *prima facie* case of obviousness exists. See MPEP 2144.05), and a retardation R_{th} of 70 to 400 nm (corresponding to Applicant's $70 \leq R_{th}(630) \leq 350$ (**claim 1**) and $160 \leq R_e(630) \leq 350$ (**claim 2**), where claimed ranges overlap or lie inside the ranges disclosed in the prior art, a *prima facie* case of obviousness exists. See MPEP 2144.05 (paragraph [0044]). Ito teaches the retardation values of R_e and R_{th} are measured at 633 nm (paragraph [0095]).

The cellulose acylate film comprises a cellulose ester/acetate (cellulose is a polymer of glucose [corresponding to Applicant's glucose unit of cellulose]), wherein a hydroxyl group of the 2nd place (corresponding to Applicant's 2 position), 3rd place (corresponding to Applicant's 3 position), and 6th place (corresponding to Applicant's 6 position) are substituted by acetyl groups (acetyl are acyl groups having 2 carbons) (corresponding to Applicant's hydroxyl group substituted by an acyl group having 2 or more carbons/acyl group is acetyl in **claim 3**) with an acetylation degree of 57% to 62% (a degree of acetylation corresponds to a total degree of substitution (i.e. DS2 + DS3 + DS6) according to the formula: $\text{Deg_Acet} = \text{MW acetic acid (i.e. 60/06)} / [\text{MW glucose unit (i.e. 162.16)} - \text{Deg_Sub} * \text{MW hydroxyl (i.e. 17.01)} + \text{Deg_Sub (MW acetyl (i.e.59.05))}]$, which simplifies to $\text{Deg_Sub} = 162.16 * \text{Deg_Acet} / (60.06 - 42.04 * \text{Deg_Acet})$, where Deg_Sub is total degree of substitution and Deg_Acet is acetylation degree). An acetylation degree of 57% to 62% corresponds to a degree of substitution of 2.56 to 2.95 (corresponding to Applicant's $2.00 \leq \text{DS2+DS3+DS6} \leq 3.0$) (paragraph [0006] – [0007]). The hydroxyl group at the 6th place is substitute by an acyl group by at least 32% to the whole degree of substitution (corresponding to Applicant's DS6 / $(\text{DS2+DS3+DS6}) \leq 0.315$) (**claim 1**) (paragraph [0007]).

MPEP 2112 [R-3] states:

The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. “The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness.” *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references). See also *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983).

One of ordinary skill in the art at the time of the invention would have expected the cellulose acylate film of Ito to have a water vapor permeability of from 400 to 2300 g/m² *24 hr for a film thickness of 80μm at 60°C and 95%RH, because Ito teaches that it is preferable to polymerize the cellulose acylate film with a polymerization nature monomer to inhibit dimension change of the film (paragraph [0012]), and the cellulose acylate film of Ito has a similar cellulose material (see analysis of claim 1), has the same total degree of substitution (see analysis of claim 1), the same degree of substitution at the DS6 position (see analysis of claim 1), the same substitution (see analysis of claims 1 and 3), similar retardation properties (claims 1 - 2 and 18), a similar amount of retardation raising agent (see analysis of claim 4, and paragraph [0009]), similar additives (see analysis of claims 5 and 7), a similar thickness (see analysis of claim 8), similar dimensional properties (see analysis of claim 12), a similar glass transition temperature (see analysis of claim 13), a similar haze (see analysis of claim 16), similar particles (see paragraph [0040]), and when combined to form a polarizing plate has similar polarization degree (see analysis of claim 21) as compared to the claimed film, and would therefore be expected to have similar properties.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the cellulose acylate film of Ito having a water vapor permeability of from 400 to 2300 g/m² *24 hr for a film thickness of 80μm at 60°C and 95%RH. One of ordinary skill in the art would have been motivated to do so in order to allow moisture from an adhesive for attaching the cellulose acylate film and the polarizer

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to escape the assembly, and to simultaneously minimize the amount of moisture that can permeate into the polarizer through the cellulose acylate film (**claim 1**).

With respect to **claim 4**, the cellulose acylate film comprises a retardation raising agent (corresponding to Applicant's retardation producing agent) wherein the retardation raising agent is a disc-line liquid crystallinity compound (corresponding to Applicant's discotic compound (paragraph [0004])).

With respect to **claim 5**, it is preferred to add ethylinically unsaturated monomers having ultraviolet absorption to the cellulose acylate film (corresponding to Applicant's ultraviolet ray absorbent) (paragraph [0013], [0017]).

With respect to **claim 6**, the cellulose acylate film has a thickness of 30 to 180 μm (corresponding to Applicant's 50 to 110 μm ; where claimed ranges overlap or lie inside the ranges disclose in the prior art, a *prima facie* case of obviousness exists. See MPEP 2144.05) (paragraph [0046]).

With respect to **claim 7**, the ethylinically unsaturated monomer is added to the cellulose acylate film in an amount of 20 to 60% by weight of cellulose acylate (corresponding to Applicant's additive in an amount of 10 to 30% by weight of cellulose acylate) (paragraph [0013]).

With respect to **claim 8**, one of ordinary skill in the art at the time of the invention would have expected the cellulose acylate film of Ito would have ΔR_e of 12 nm or less and a ΔR_{th} of 32 nm or less because Ito has a similar cellulose material (see analysis of claim 1), has the same total degree of substitution (see analysis of claim 1), the same degree of substitution at the DS6 position (see analysis of claim 1), the same

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substitution (see analysis of claims 1 and 3), similar retardation properties (claims 1 - 2 and 18), a similar amount of retardation raising agent (see analysis of claim 4, and paragraph [0009]), similar additives (see analysis of claims 5 and 7), a similar thickness (see analysis of claim 8), similar dimensional properties (see analysis of claim 12), a similar glass transition temperature (see analysis of claim 13), a similar haze (see analysis of claim 16), similar particles (see paragraph [0040]), and when combined to form a polarizing plate has similar polarization degree (see analysis of claim 21) as compared to the claimed film, and would therefore be expected to have similar properties.

Alternatively, it would have been obvious to one of ordinary skill in the art to form the cellulose acylate film of Ito having a ΔR_e of 12 nm or less and a ΔR_{th} of 32 nm or less. One of ordinary skill in the art would have been motivated to do so in order to minimize the changes in retardation properties of the film (and thus the degradation of display performance for a display including the film) due to changes in the ambient humidity.

With respect to **claim 9**, one of ordinary skill in the art at the time of the invention would have expected that the cellulose acylate film of Ito would have an equilibrium moisture content at 25°C and 80% relative humidity of 3.4% or less, because Ito has a similar cellulose material (see analysis of claim 1), has the same total degree of substitution (see analysis of claim 1), the same degree of substitution at the DS6 position (see analysis of claim 1), the same substitution (see analysis of claims 1 and 3), similar retardation properties (claims 1 - 2 and 18), a similar amount of retardation

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raising agent (see analysis of claim 4, and paragraph [0009]), similar additives (see analysis of claims 5 and 7), a similar thickness (see analysis of claim 8), similar dimensional properties (see analysis of claim 12), a similar glass transition temperature (see analysis of claim 13), a similar haze (see analysis of claim 16), similar particles (see paragraph [0040]), and when combined to form a polarizing plate has similar polarization degree (see analysis of claim 21) as compared to the claimed film, and would therefore be expected to have similar properties.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to produce the cellulose acylate film of Ito having an equilibrium moisture content of 3.4% or less at 25 °C and 80%RH. One of ordinary skill in the art would have been motivated to do so in order to minimize the dimensional change due to changing moisture contents of the film, in order to maintain consistent optical properties (and hence display performance) during changes in humidity.

With respect to **claim 11**, one of ordinary skill in the art at the time of the invention would have expected the cellulose acylate film of Ito to undergo a change in weight of from 0 to 5% when allowed to stand for 48 hours under a condition of 80 °C and 90%RH, because Ito has a similar cellulose material (see analysis of claim 1), has the same total degree of substitution (see analysis of claim 1), the same degree of substitution at the DS6 position (see analysis of claim 1), the same substitution (see analysis of claims 1 and 3), similar retardation properties (claims 1 - 2 and 18), a similar amount of retardation raising agent (see analysis of claim 4, and paragraph [0009]), similar additives (see analysis of claims 5 and 7), a similar thickness (see analysis of

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claim 8), similar dimensional properties (see analysis of claim 12), a similar glass transition temperature (see analysis of claim 13), a similar haze (see analysis of claim 16), similar particles (see paragraph [0040]), and when combined to form a polarizing plate has similar polarization degree (see analysis of claim 21) as compared to the claimed film, and would therefore be expected to have similar properties.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the cellulose acylate film of Ito such that it would undergo a change in weight of from 0 to 5% when allowed to stand for 48 hours under a condition of 80°C and 90% RH. One of ordinary skill in the art would have motivated to do so in order to minimize the dimensional change of the film under high temperature and humidity conditions, such that that the quality of the display into which it is incorporated would not be degraded under high temperature and humidity conditions.

With respect to **claim 12**, one of ordinary skill in the art at the time of the invention would have expected the cellulose acylate film of Ito to undergo a change in dimensions of from -2 to 2% when allowed to stand for 24 hours under each of a condition of 60°C and 95% RH and a condition of 90°C and 5%RH, because Ito teaches that it is preferable to polymerize the cellulose acylate film with a polymerization nature monomer to inhibit dimension change of the film (paragraph [0012]).

Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention for form the cellulose acylate film of Ito such that it would undergo a change in dimension from -2 to 2% when allowed to stand for 24 hours under each of a condition of 60°C and 95%RH and a condition of 90°C and 5%RH. One of ordinary

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skill in the art would have been motivated to do so in order to minimize the dimensional change of the film under high temperature and/or humidity conditions, such that the quality of the display into which it is incorporated would not be degraded under high temperature and/or humidity conditions.

With respect to **claim 13**, the cellulose acylate film has a glass transition temperature of 150°C or less (corresponding to Applicant's glass transition temperature of 80°C to 180°C; where claimed ranges overlap or lie inside the ranges disclosed in the prior art, a *prima facie* case of obviousness exists. See MPEP 2144.05) (paragraph [0053]).

With respect to **claim 14**, one of ordinary skill in the art at the time of the invention would have expected the cellulose acylate film of Ito to have an elastic modulus of from 1500 to 5000 MPa, because Ito teaches that it is preferable to polymerize the cellulose acylate film with a polymerization nature monomer to raise the elastic modulus of the film (paragraph [0012]-[0013]).

With respect to **claim 15**, one ordinary skill in the art at the time of the invention would have expected the cellulose film of Ito to have a photoelasticity coefficient of $50 \times 10^{-13} \text{ cm}^2/\text{dyne}$ or less, because Ito has a similar cellulose material (see analysis of claim 1), has the same total degree of substitution (see analysis of claim 1), the same degree of substitution at the DS6 position (see analysis of claim 1), the same substitution (see analysis of claims 1 and 3), similar retardation properties (claims 1 - 2 and 18), a similar amount of retardation raising agent (see analysis of claim 4, and paragraph [0009]), similar additives (see analysis of claims 5 and 7), a similar thickness

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(see analysis of claim 8), similar dimensional properties (see analysis of claim 12), a similar glass transition temperature (see analysis of claim 13), a similar haze (see analysis of claim 16), similar particles (see paragraph [0040]), and when combined to form a polarizing plate has similar polarization degree (see analysis of claim 21) as compared to the claimed film, and would therefore be expected to have similar properties.

With respect to **claim 16**, the haze of the film is 1% or less (corresponding to Applicant's haze of 0.01 to 2%; where claimed ranges overlap or lie inside the ranges disclose in the prior art, a *prima facie* case of obviousness exists. See MPEP 2144.05) (paragraph [0051]).

With respect to **claim 18**, as disclosed previously, the film has a retardation R_e of between 0 and 70 nm and retardation R_{th} of 70 to 400 nm which corresponds to Applicant's R_e and R_{th} satisfying formula B, as described below. The claimed R_e and the disclosed R_e overlap in the range of 46 nm to 70 nm. Based on Applicant's formula B, the R_{th} , for would need to be between 309 nm and 399 nm if the R_e was 46 nm, between 167 nm and 257 nm if the R_e was 70. Because the claimed range of R_{th} overlaps the disclosed range of R_{th} where the claimed range of R_e overlaps the disclosed range of R_e , a *prima facie* case of obviousness exists. See MPEP 2144.05.

With respect to **claim 19**, one of ordinary skill in the art at the time of the invention would have expected the cellulose acylate film of Ito to satisfy formulas D and E, because Ito has a similar cellulose material (see analysis of claim 1), has the same total degree of substitution (see analysis of claim 1), the same degree of substitution at

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the DS6 position (see analysis of claim 1), the same substitution (see analysis of claims 1 and 3), similar retardation properties (claims 1 - 2 and 18), a similar amount of retardation raising agent (see analysis of claim 4, and paragraph [0009]), similar additives (see analysis of claims 5 and 7), a similar thickness (see analysis of claim 8), similar dimensional properties (see analysis of claim 12), a similar glass transition temperature (see analysis of claim 13), a similar haze (see analysis of claim 16), similar particles (see paragraph [0040]), and when combined to form a polarizing plate has similar polarization degree (see analysis of claim 21) as compared to the claimed film, and would therefore be expected to have similar properties.

With respect to **claim 20**, disclosed is a polarizing plate comprising a polarizing film (corresponding to Applicant's polarizer) with protective films on both of its sides, wherein at least one of the protective films is the above described cellulose acylate film (corresponding to Applicant's protective film comprising a cellulose acylate film of claim 1) (paragraph [0004] (7)).

With respect to **claim 21**, the polarization plate has a polarization degree of between 99 and 100% (corresponding to Applicant's $95.0 \leq P$) (paragraph [0081]).

With respect to **claim 22**, one of ordinary skill in the art at the time of the invention would have expected the polarizing plate of Ito to have cross transmittances within the claimed ranges because Ito has a similar cellulose material (see analysis of claim 1), has the same total degree of substitution (see analysis of claim 1), the same degree of substitution at the DS6 position (see analysis of claim 1), the same substitution (see analysis of claims 1 and 3), similar retardation properties (claims 1 - 2

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and 18), a similar amount of retardation raising agent (see analysis of claim 4, and paragraph [0009]), similar additives (see analysis of claims 5 and 7), a similar thickness (see analysis of claim 8), similar dimensional properties (see analysis of claim 12), a similar glass transition temperature (see analysis of claim 13), a similar haze (see analysis of claim 16), similar particles (see paragraph [0040]), and when combined to form a polarizing plate has similar polarization degree (see analysis of claim 21) as compared to the claimed film, and would therefore be expected to have similar properties.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the polarizing plate of Ito such that the plate has a cross transmittance as low as possible throughout the visible spectrum (roughly including the range 380 nm to 700 nm), and specifically below 2% at a wavelength of 380 nm, below 0.1% at a wavelength of 410 nm, and below 0.5% at a wavelength of 700 nm. One of ordinary skill in the art would have been motivated to do because decreasing cross transmittance of the polarizers in a display decreases the light leakage and increases the contrast (i.e. causes the displayed blacks to be darker), and decreasing cross transmittance across the full range of visible light would be required in order to effect the decrease in light leakage and increase in contrast across all light colors in the visible spectrum.

With respect to **claim 23**, one of ordinary skill in the art at the time of the invention would have expected the polarizing plate of Ito to have changes in cross transmittance and polarization degree within the claimed ranges because the cellulose

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acrylate film of Ito has a similar cellulose material (see analysis of claim 1), has the same total degree of substitution (see analysis of claim 1), the same degree of substitution at the DS6 position (see analysis of claim 1), the same substitution (see analysis of claims 1 and 3), similar retardation properties (claims 1 - 2 and 18), a similar amount of retardation raising agent (see analysis of claim 4, and paragraph [0009]), similar additives (see analysis of claims 5 and 7), a similar thickness (see analysis of claim 8), similar dimensional properties (see analysis of claim 12), a similar glass transition temperature (see analysis of claim 13), a similar haze (see analysis of claim 16), similar particles (see paragraph [0040]), and when combined to form a polarizing plate has similar polarization degree (see analysis of claim 21) as compared to the claimed film, and would therefore be expected to have similar properties.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the polarizing plate of Ito such that the change in cross transmittance would be less than +/- 6% and the change in polarization degree would be less than -10% after the polarization plate is allowed to stand at 60°C and 95%RH for 500 hours. One of ordinary skill in the art would have been motivated to do so because decreasing the change in cross transmittance and polarization degree over time (at any given temperature and humidity) decreases the degradation of screen brightness and contrast in a display incorporating the polarizers, wherein the relatively high temperature and humidity would accelerate any degradation effect.

With respect to **claim 24**, the cellulose film (and in turn the polarizing plate) may be provided with a hard coat layer (corresponding to Applicant's hard coat layer) (paragraph [0042]).

With respect to **claim 25**, the limitation that the polarizing plate is packed in a moisture proof bag wherein the moisture proof bag has an internal humidity of from 43 to 70% at 25 °C is a state of intended use, in that the polarizing plate is being claimed, not a bag which contains a polarizing plate. Statements of intended use of a claimed invention must result in a structural difference from the prior art in order to patentably distinguish the claimed invention from the prior art. Here, the article disclosed in the prior art would have been capable of being packaged in a moisture proof bag so claimed, and thus the intended use would not necessitate any structural limitations not present in the prior art.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to package the polarizing plate of Ito in a moisture proofed bag having an internal humidity of 43 to 70% RH at 25 °C. One of ordinary skill in the art would have been motivated to do so due to the moisture sensitivity of the polarizing plate, as taught by Ito.

With respect to **claim 26**, the limitation that the polarizing plate is superposed on a liquid crystal cell at a second humidity is a statement of intended use. Statements of intended use of a claimed invention must result in a structural difference from the prior art in order to patentably distinguish the claimed invention from the prior art. Here, the article disclosed in the prior art is capable of being superposed on a liquid crystal cell at

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a humidity similar to (i.e. within $\pm 15\%$ RH of) the humidity at which it is packaged in the bag as claimed, and thus the intended use would not necessitate any structural limitations not present in the prior art.

The limitation that the polarizing plate is packed in a moisture proof bag wherein the moisture proof bag has first humidity within $\pm 15\%$ RH of a second humidity, wherein the polarizing plate is superposed on a liquid crystal cell at the second humidity is a statement of intended use, in that the polarizing plate is being claimed, not a bag which contains a polarizing plate. Statements of intended use of a claimed invention must result in a structural difference from the prior art in order to patentably distinguish the claimed invention from the prior art. Here, the article disclosed in the prior art would have been capable of being packaged in a moisture proof bag so claimed, and thus the intended use would not necessitate any structural limitations not present in the prior art.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to package the polarizing plate of Ito in a moisture-proofed bag at a relative humidity similar to (i.e. within $\pm 15\%$ RH of) the humidity at which the polarizing plate is intended to be superposed on a liquid crystal cell. One of ordinary skill in the art would have been motivated to do so in order to minimize any difference in dimensional change between the polarizing plate and the liquid crystal cell after superposing them when the polarizing plate and liquid crystal cell equilibrate to the same ambient humidity to avoid degradation of a display into which they are incorporated.

With respect to **claim 27**, disclosed is a liquid crystal display (corresponding to Applicant's liquid crystal display) whose liquid crystal cell (corresponding to Applicant's

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liquid crystal cell) is of OCB mode (corresponding to Applicant's ODB-mode), VA mode (corresponding to Applicant's VA mode) or TN mode, wherein the display comprises a cellulose acylate film as described above (corresponding to Applicant's cellulose acylate film of claim 1) between the liquid crystal cell and a polarizing film (paragraph [0004] (8)-(9)).

With respect to **claim 28**, Ito discloses that a single cellulose acylate iflm may be used in a display (corresponding to Applicant's liquid crystal cell contains only one cellulose acylate film) (paragraph [0008] and [0084]; where a polarization plate of the Ito is only used on one side of the display), and as disclosed previously, the display may be a VA mode display (corresponding to Applicant's VA mode liquid crystal cell) (see paragraph [0084]).

With respect to **claim 29**, Ito discloses forming the polarizing plate from the cellulose acylate film, a polarizer, and a protection film on the opposite site of the polarizer from the cellulose acylate film (paragraph [0073]). Transmission type liquid crystal displays generally employ a backlight on the back side of the liquid crystal cell. In forming the transmission type liquid crystal display, the polarizing plates of the Ito may be used on both sides of the liquid crystal cell (paragraph [0084]), and therefore, at least one polarizing plate and the included cellulose acylate film would be between the liquid crystal cell and the backlight (corresponding to Applicant's cellulose acylate film and polarizing plate between the liquid crystal cell and the backlight). As disclosed previously, the display may be a VA mode display (corresponding to Applicant's VA mode liquid crystal cell) (see paragraph [0084]).

With respect to **claim 30**, as disclosed previously, the film has a retardation R_e of between 0 and 70 nm and retardation R_{th} of 70 to 400 nm which corresponds to Applicant's R_e and R_{th} satisfying formula B, as described below. The claimed R_e and the disclosed R_e overlap in the range of 46 nm to 70 nm. Based on Applicant's formula B, the R_{th} , would need to be between 309 nm and 399 nm if the R_e was 46 nm, between 167 nm and 257 nm if the R_e was 70. Because the claimed range of R_{th} overlaps the disclosed range of R_{th} where the claimed range of R_e overlaps the disclosed range of R_e , a *prima facie* case of obviousness exists. See MPEP 2144.05.

2. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito, as applied to claims 1 – 16 & 18 - 29 above, and further in view of Shimzu et al. (US 2002/0102369).

Ito discloses that inorganic particles, and preferably silicon dioxide particles (corresponding to Applicant's silicon dioxide particles) among others, are added to the cellulose acylate film (paragraphs [0040] - [0041]).

Ito does not explicitly disclose that the particles have a secondary average particle size of from 0.2 to 1.5 μm .

Shimzu et al. discloses cellulose ester films for use as protective films for polarizing films for polarizing plates (paragraph [0188]). Shimzu discloses that it is preferable to add fine particles, such as silicon dioxide, to cellulose ester films (cellulose acylates are a subset of cellulose esters) to provide optimal slip and good abrasion

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resistance (paragraph [0188]). Shimzu discloses that the second order particles of the fine particles have an average particle diameter of 0.01 to 1.0 μm (paragraph [0188]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the silicon dioxide fine particles of Shimzu, having a second order particle average particle diameter (corresponding to Applicant's secondary average particle size) of 0.01 to 1.0 μm as the fine particles of Ito (corresponding to Applicant's 0.2 to 1.5 μm ; where claimed ranges overlap or lie inside the ranges disclosed in the prior art, a prima facie case of obviousness exists. See MPEP 2144.05). One of ordinary skill in the art would have been motivated to do so in order to obtain optimal slip properties and good abrasion resistance for the film, as taught by Shimzu et al.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

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1985); *In re Van Ornum*, 686 F.2d 937, 214 SPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1, 5 – 9, 11 – 28 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 5 – 21, 23 – 25, 27 and 29 - 34 of copending Application No. 11/659,004.

Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 1 of the instant application corresponds to claims 5 and 12 of the '004 application. The only differences in scope between claim 5 of the '004 application and claim 1 of the instant application are that claim 5 of the '004 application additionally claims that the cellulose acylate film has a thickness variation between every 10 mm in a breadth direction of 0.06 μm or less, and that $\text{DS}_2 + \text{DS}_4 + \text{DS}_6 \leq 2.85$ (as opposed

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to ≤ 3.00 as claimed in the instant application). As such, claims 5 and 12 of the '004 application recites every limitation of, and would therefore render obvious, claim 1 of the instant application. Therefore claim 1 is rejection as obvious over claims 5 and 12 of the '004 application.

With respect to claims 4 – 28 of the instant application, claims 6 – 11, 13 – 21, 23 – 25, 27, 29 – 31 and 34 of the '004 application respectively correspond to claims 4 – 9, 11 - 26 and 28 of the instant application, and claims 32 and 33 each independently correspond to claim 27 of the instant application. The claims 6 – 11- 13-- 21, 23 - 25, 27, 29 - 31 and 34 of the '004 application differ from claims 4 - 28 of the instant application in that the claims of the '004 application additionally claim that the cellulose acylate film has a thickness variation between every 10 mm in a breadth direction of 0.6 μm or less. The claims of the '004 application lack the limitation that the cellulose acylate film comprises a cellulose acylate having a glucose unit of cellulose, wherein a hydroxyl group of the glucose unit is substituted by an acyl group having 2 or more carbon atoms, wherein DS2, DS3, and DS6 respectively representing degrees of substitution of the hydroxyl groups at the 2, 3 and 6 positions of the glucose unit by the acyl group satisfy formulae (I) and (II); (I) $2.00 \leq \text{DS2} + \text{DS3} + \text{DS6} \leq 3.00$; (II) $\text{DS6} / (\text{DS2} + \text{DS3} + \text{DS6}) \leq 0.315$. Claim 8 of the '004 application additionally differs from claim 6 of the instant application in that claim 6 of the instant application additionally requires that the thickness of the film be from 40 to 110 μm (instead of the broader range of 40 to 180 μm in claim 8 of the '004 application, however, where claimed ranges overlap or lie inside the ranges disclosed in the conflicting claims, a prima facie case of

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obviousness case of obviousness exists. See MPEP 2144.05). Claim 29 of the '004 application additionally claims that the additional layer is provided on a surface of a protective film provided on a side opposite to a liquid crystal cell of the polarizing plate. Claim 32 of the '004 application additionally claims that the display is an OCB mode display and lacks the limitation that the display comprise a liquid crystal cell of OCB mode of VA mode, however, the recitation that the display is an OCB-mode liquid crystal display would presuppose the existence in the display of an OCB mode liquid crystal cell (and hence the OCB mode liquid crystal display of claim 32 of the '004 application would include an OCB mode liquid crystal cell as claimed in claim 27 of the instant application). Claim 33 of the '004 application additionally differs from claim 27 of the instant application in that claim 32 of the '004 application additionally claims that the display is a VA mode display and lacks the limitation that the display comprise a liquid crystal cell of the OCB mode of VA mode, however, the recitation that the display is a VA-mode liquid crystal display would presuppose the existence in the display of a VA mode liquid crystal cell (and hence the VA mode liquid crystal display of claim 32 of the '004 application would include a VA mode liquid crystal cell as claimed in claim 27 of the instant application).

Claim 5 of the '004 application teaches that one of ordinary skill in the art could make a cellulose acylate film comparable to claims 6 – 11, 13 – 21, 23 – 25, 27, 29 – 31 and 34 of the '004 application, respectively, wherein the cellulose acylate film comprises a cellulose acylate having a glucose unit of cellulose, wherein a hydroxyl group of the glucose unit is substituted by an acyl group having 2 or more carbon atoms, wherein

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DS2, DS3, and DS6 respectively representing degrees of substitution of the hydroxyl group of the glucose unit is substituted by an acyl group having 2 or more carbon atoms, wherein DS2, DS3, and DS6 respectively representing degrees of substitution of the hydroxyl at the 2, 3 and 6 positions of the glucose unit the acyl group satisfy formulae (I) and (II); (I) $2.00 \leq DS2 + DS3 + DS6 \leq 2.85$; (II) $DS6 / (DS2 + DS3 + DS6) \leq 0.315$. Such a combination would have the predictable result that the resulting cellulose acylate film would comprise substitution such that $2.00 \leq DS2 + DS3 + DS6 \leq 2.85$ and $DS6 / (DS2 + DS3 + DS6) \leq 0.315$. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the cellulose acylate films of claims 6 - 11, 13 - 21, the polarizing plates of claims 23 - 25, 27, 29 - 31, and the displays of claims 32 - 34 of the '004 application wherein the cellulose acylate film was substituted such that $2.00 \leq DS2 + DS3 + DS6 \leq 2.85$ and $DS6 / (DS2 + DS3 + DS6) \leq 0.315$. One of ordinary skill in the art would have been motivated to do so because the resulting films, plates and displays would have both the benefits of having the cellulose acylate substituted such that $2.00 \leq DS2 + DS3 + DS6 \leq 2.85$ and $DS6 / (DS2 + DS3 + DS6) \leq 0.315$ and the benefits of each of the respective claims 6 - 11, 13 - 21, 23 - 25, 27, and 29 - 34. Thus, claims 4 - 28 of the instant application are obvious over claims 6 - 21, 23 - 25, 27, 29 - 34. Thus, claims 4 - 9, 11 - 28 of the instant application are obvious over claims 6 - 11, 13 - 21, 23 - 25, 27, 29 - 31 and 34 of the '004 application in view of claim 5 of the '004 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

5. Applicant notes, "In the Official Action, claims 1, 2, 19 and 27 stand objected to for the reasons set forth at page 2 of the Official Action. The objections of claims 2, 19 and 27 are moot in view of the above amendments to such claims, in which claims 2 and 19 has been amended to recite 'at least one cellulose acylate film according to claim 1.'" (Remarks, Pg 9).

6. Applicant notes, "Applicants note that the word 'representing' in the phrase 'DS2, DS3 and DS6 respectively representing degrees of substitution of the hydroxyl groups at 2, 3, and 6 positions of the glucose unit by the acyl group satisfy formulae (I) and (II)' recited in claim 1, is grammatically correct" (Remarks, Pg 9).

EXAMINER'S RESPONSE: Applicant's arguments with respect to claims 1, 2, 19 and 27 have been fully considered and are persuasive. The objection of claims 1, 2, 19 and 27 has been withdrawn.

7. Applicant notes, "Claims 26 and 29 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. This rejection is moot in view of the above amendments to claims 26 and 29, in which claims 26 has been amended to recite the phrases 'a first internal humidity' and 'after removal from the moisture-proofed bag', and claim 29 has been amended to recite 'the cellulose acylate film is between the liquid crystal cell and the backlight'. Accordingly, for at least the above reasons, withdrawal of the §112, second paragraph, rejection is respectfully requested" (Remarks, Pg 10).

EXAMINER'S RESPONSE: Applicant's arguments with respect to claims 26 and 29 have been fully considered and are persuasive. The objection of claims 26 and 29 has been withdrawn.

8. Applicant argues, "Concerning the claimed formulas (V) and (VI), the Patent Office has relied on paragraph [0004] of Ito et al. for disclose an Re retardation value of between 0 and 70 nm, and a Rth retardation value of between 70 and 400 nm. See Official Action at page 4. However, such disclosure of *Ito et al* does not have any mention of the claimed Re(630) and Rth(630) recited in formulas (V) and (VI), respectively. Nor does *Ito et al* have any recognition of attaining such retardation characteristics, in combination with having a water vapor permeability of from 400 g/cm²·24 hr to 2,300 g/m²·24 in terms of a film thickness of 80 µm, as presently claimed" (Remarks, Pg 10).

EXAMINER'S RESPONSE: Applicant's arguments have been fully considered but they are not persuasive. Ito et al. teach Rth and Re values measure at 633 nm in paragraph [0095] of their disclosure. It would be reasonable to believe the Rth and Re values of a cellulose acylate film measured at 633 nm would be similar in value to Rth and Re values of a cellulose acylate film measured at 630 nm such that Ito et al. teach the same product as claimed by the Applicant.

Considering Applicant's limitation of a cellulose acylate film having a particular water vapor permeability, it would be reasonable to believe the cellulose acylate film taught by Ito et al. would have the same water vapor permeability as the film claimed by

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the Applicant due to the similarities in structure and method of making, as discussed above.

9. Applicant argues, "*Shimizu et al* fails to cure the above described deficiencies of Ito et al" (Remarks, Pg 11).

EXAMINER'S RESPONSE: Applicant's arguments have been fully considered but they are not persuasive. The Examiner directs Applicant to the discussion above regarding Ito et al.

10. Applicant argues, "Claims 1 and 4 – 28 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being obvious over claims 5 – 21, 23 – 25, 27 and 29 – 34 of copending Application No. 11/659,004. Without addressing the propriety of this rejection, Applicants respectfully request that such rejection be held in abeyance until the present application is otherwise deemed to be in condition for allowance" (Remarks, Pg 11).

EXAMINER'S RESPONSE: The Examiner maintains the rejection until patentable subject matter is determined.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE T. GUGLIOTTA whose telephone number is (571)270-1552. The examiner can normally be reached on M - F 8:30 a.m. - 6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1786

/NICOLE T GUGLIOTTA/
Examiner, Art Unit 1783